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(54) Improvements relating to closures

(57) A closure for application to the screw-threaded neck of a container is moulded in one piece from a resilient plastics material and has a top 11 with a dependent skirt 12 screw-threaded on its internal surface. Spaced below the top 11 the skirt has an inwardly projecting rib 14. An outwardly projecting rib 17 is

connected to the top 11 and forms with rib 14 a downwardly open channel for receiving the top portion of the neck of the container. Ribs 20 are formed on the underside of the top 11 and project downward into the channel to form a seal with the top edge of the neck. In a variant, rib 14 is replaced by two, undercut, triangular section ribs (25, 26, Fig. 2) and rib 17 has two similar ribs (28, 29) at the other side of the channel.

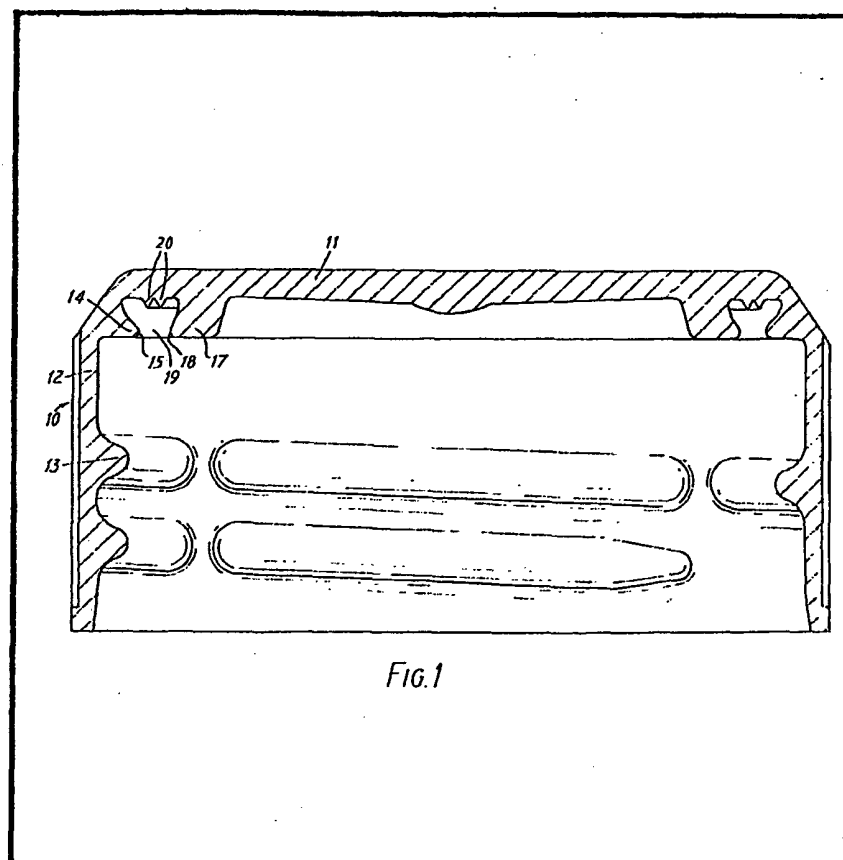


Fig.1

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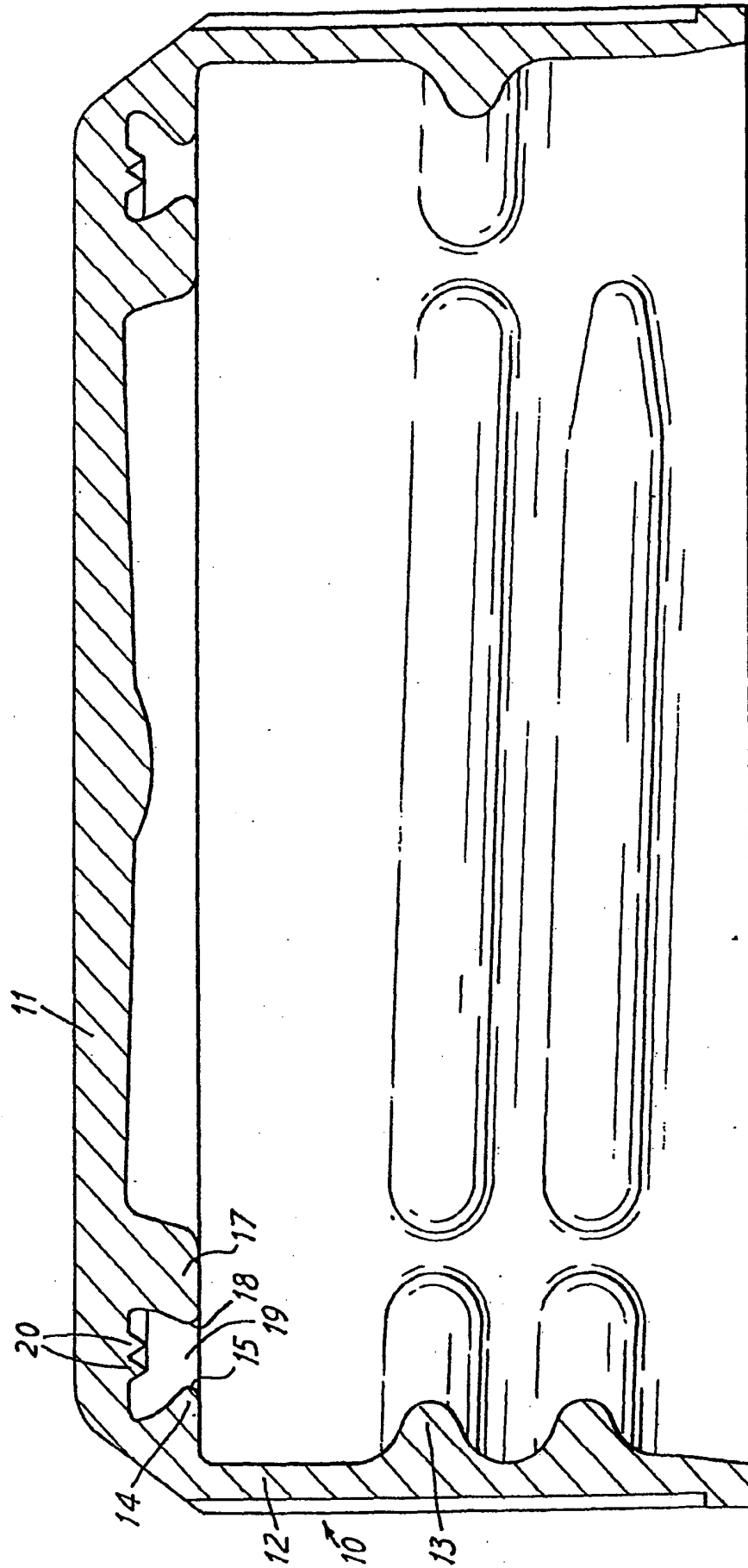


FIG. 1

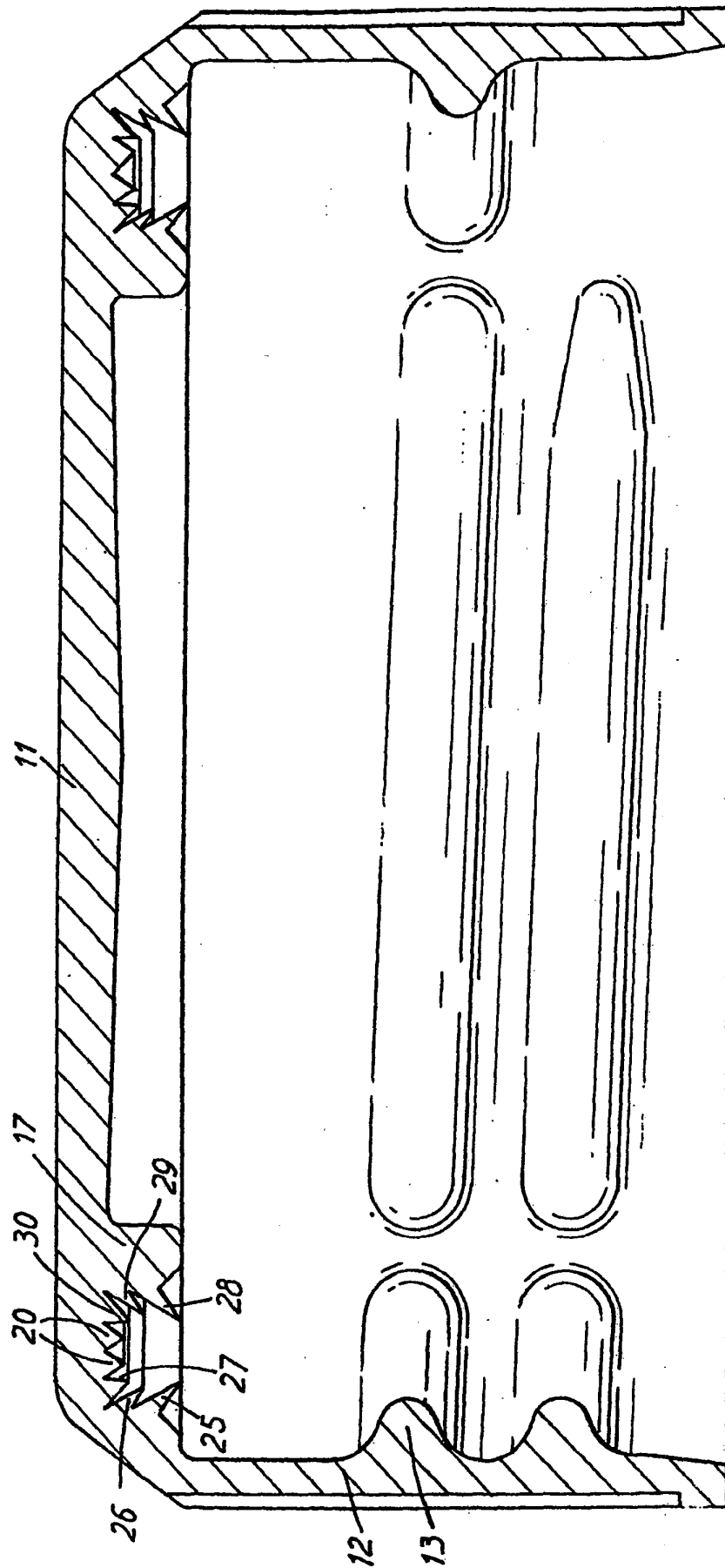


FIG. 2

SPECIFICATION

Improvements relating to closures

This invention relates to closures.

According to the invention there is provided a
5 closure for application to the externally threaded
neck of a container, which closure is moulded in
one piece from a plastics material and comprises
a top and a depending skirt having an internal
screw-thread, a first annular sealing rib extending
10 radially inwardly from the internal surface of the
skirt at a location above the screw thereof and
spaced below the top of the closure, and a radially
outwardly directed second annular sealing rib
depending from the underside of the top, so as
15 with the top and skirt to form an annular channel
for accommodating the top edge portion of the
neck of the container and forming a seal by
engagement of the first and/or second sealing rib
with said top edge portion, the top of the closure
20 being formed with one or more further annular
sealing ribs projecting downward into the channel
to form a seal with the top edge of the neck
portion of the container.

The invention will now be described in more
25 detail with reference to the accompanying
drawings in which:

Figure 1 shows a first embodiment of the
invention in axial section, and

Figure 2 shows a second embodiment of the
30 invention in axial section.

Referring to Figure 1 a closure 10 is moulded in
one piece from a resilient plastics material. The
closure is designed to provide a seal for a bottle
containing a beverage under pressure i.e. a
35 carbonated pressure and to be re-usable to re-
seal the bottle after part of its contents have been
removed. The closure has a top 11 and a skirt 12
which is internally screw-threaded, and externally
knurled for improvement manual grip. Above its
40 screw-thread ridge 13 and adjacent the top the
skirt has an internal radially-inwardly projecting
sealing rib 14 the tip 15 of which extends inward
to a greater extent than the screw-thread ridge 13.
The tip 15 of the rib is in this instance radiussed.

Spaced radially inwardly from rib 14 the top 11
45 has a downwardly and outwardly extending rib 17
the tip 18 of which is radiussed and projects
towards rib 14. The ribs 14, 17 and the top
together define an annular channel 19 to receive
and form a seal with the top edge portions of the
50 neck of the bottle, and the top 11 has in the
channel two triangular section sealing ribs 20 for
engaging the end face of the neck of the bottle.

In use of the closure, the end portion of the
55 neck of the bottle is forced into the channel as the
closure is screwed home so that the sealing ribs
14 and 17 can engage external and internal

surfaces respectively of the neck to form a seal
and so that the ribs 20 come into sealing
60 engagement with the top end of the neck. The
positions of and spacing between the ribs 14 and
17 are preferably determined in accordance with
the tolerances on the neck size of the bottle. For
example the tolerance on the neck diameter of a
65 glass bottle is based on the outside diameter, and
it is arranged that when the neck diameter is on
the upper limit the outer rib 14 is in full sealing
engagement with the neck and on the lower limit,
a rib 14 is in light sealing contact with the neck.
70 The internal diameter of the neck is not the
subject of tolerance but tends to be a pre-
determined amount less than the outside
diameter and in consequence, the sealing
pressure between the inner rib 17 and the internal
75 surface of the neck tends to vary inversely as the
pressure of rib 14 on the neck, so that a lighter
sealing pressure by one of ribs 14, 17 is
compensated by a heavier pressure by the other
rib.

In a variant illustrated in Figure 2 of the
80 drawings, rib 14 is replaced by two triangular ribs
25, 26 which are disposed in series and which are
undercut at their sides remote from the top 11,
and an additional similarly undercut triangular rib
85 27 is disposed so as for sealing engagement with
the radiussed outer corner portion of the neck of
the bottle. Rib 17 is replaced by triangular ribs 28,
29 which are undercut at their sides remote from
the top 11, and an additional similarly undercut
90 rib 30 is disposed for sealing engagement with
the radiussed inner corner portion of the neck.
The sealing apices of these ribs may have an
included angle of 30°.

Claims (filed on 28/10/83)

95 1. A closure for application to the externally
threaded neck of a container, which closure is
moulded in one piece from a resilient plastics
material and comprises a top and a depending
skirt having an internal screw-thread, a first
100 annular sealing rib extending radially inwardly
from the internal surface of the skirt at a location
above the screw-thread thereof and spaced below
the top of the closure, and a radially outwardly
directed second annular sealing rib connected to
105 the top, so as with the top and skirt to form an
annular channel for accommodating the top
portion of the neck of the container and forming a
seal by engagement of the first and/or second
sealing rib with the radially outer and/or radially
110 inner surfaces respectively of said top portion of
the neck, the top of the closure being formed with
one or more further annular sealing ribs projecting
downward into the channel to form a seal with
the top of the neck of the container.